

# RAPHA EXAMINATIONS BOARD

*" Education is an investment"*

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## MARKING GUIDE FOR P7 STANDARD EXAMS SET 15 2024 MATHEMATICS



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# MARKING GUIDE

Solution  $Lcm = 12$

$$\frac{1}{4} + \frac{1}{3}$$

$$\left( \frac{1}{4} \times 12 + \frac{1}{3} \times 12 \right)$$

$$\left( \frac{1}{4} \times \frac{12}{12} + \frac{1}{3} \times \frac{12}{12} \right) \text{ Ans}$$

$$\frac{(1 \times 3 + 1 \times 4)}{12} = \frac{3+4}{12} = \frac{7}{12}$$

$$\text{Reciprocal} = \frac{12}{7} \\ = 1\frac{5}{7} \text{ Ans}$$

$$2. \quad 0, 4, 10, 16, 26, 36, 36 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 4, 16, 16, 16, 10, 2 \\ = 6$$

$$3. \quad \text{Solution} \\ C = 100 \text{ m} \\ XC = 90 \\ IX = 9 \\ CXIX = 199 \text{ Ans}$$

$$\begin{aligned} \text{Solution} \\ PY+2 &= 104 \\ PX4+2 &= 10x4 \\ 4P+2 &= 40 \\ 4P+2-2 &= 40-2 \\ 4P &= 38 \\ \frac{4P}{4} &= \frac{38}{4} \text{ cm}^2 \\ P &= 9\frac{2}{4} \text{ Ans} \end{aligned}$$

5.  $94.06$

$10^0$	$10^0$	.	$10^1$	$10^2$
9	4	.	0	6

$$(9 \times 10^0) + (4 \times 10^0) + (6 \times 10^2) \text{ Ans}$$

6. Shaded region.

$$Q' \quad A_2$$



$$= 102.4 \text{ Ans}$$

8.  $0.064$

$$\frac{64}{1000} = \sqrt[3]{\frac{64}{1000}}$$

$$= \sqrt[3]{\frac{4}{10}} = \frac{4}{10} = 0.4 \text{ Ans}$$

9. Solution :

$$(6.4 \times 10^4)$$

$$\frac{64}{10} \times \frac{1}{10000}$$

$$\frac{64}{100000} = 0.00064 \text{ Ans}$$

$$= 0.00064 \text{ Ans}$$

Solution

$$D = 5 \times 1 \\ = 40 \times 6 \\ = 240 \text{ m.s.}$$

2mks

Solution

$$\text{TSA} = 2(L \times W) + 2(L \times H) + (W \times H)$$

$$2(20 \text{ m} \times 5 \text{ m}) + 2(5 \text{ m} \times 6 \text{ m}) + (5 \text{ m} \times 6 \text{ m})$$

$$2(40 \text{ m}^2) + 2(30 \text{ m}^2) + 30 \text{ m}^2$$

$$2 \times 40 \text{ m}^2 + 2 \times 30 \text{ m}^2 + 30 \text{ m}^2$$

$$80 \text{ m}^2 + 60 \text{ m}^2 + 30 \text{ m}^2$$

$$206 \text{ m}^2$$

$$\text{TSA} = 206 \text{ m}^2 \text{ Ans}$$

Selling price = buying price + Profit

$$\text{shs. } 35,900$$

$$+ \text{shs. } 4,950$$

$$\text{shs. } 40,850$$

He sold the watch at

$$\text{shs. } 40,850$$

2mks

Solution:

Change hrs to min

3.5 hrs.

$$\left(\frac{35}{10}\right) \text{ min}$$

$$\left(\frac{35}{10} \times 60\right) \text{ min}$$

$$210 \text{ min}$$

$$ST = ET - D$$

$$= 10:45 \text{ am} \\ - 3:30 \text{ hrs Ans}$$

$$\frac{7}{2} \text{ hrs min}$$

$$\frac{7}{2} \text{ min}$$

$$= 3\frac{1}{2} \text{ hrs}$$

$$= 3:30 \text{ hrs}$$

2mks.

$$= 7:15$$

14

$$\frac{7}{100} = 0.07 \text{ my}$$

$\therefore 0.07 \text{ my}$

We get interest and Principal

$$I = P \times R \times T$$

$$P = 120 \times \text{shs. } 300$$

$$\text{shs. } 36,000$$

$$= \text{shs. } 36,000 \times \frac{15}{100} \times 2$$

$$\text{shs. } 36,000 \times \frac{15}{100} \times 2$$

$$\text{shs. } 36,000 \times 15 \times 2$$

$$\text{shs. } 36,000 \times 30 \text{ my}$$

$$I = \text{shs. } 108,000$$

2mks.

Amount =  $P + I$

$$\text{shs. } 36,000$$

$$+ \text{shs. } 108,000$$

$$\text{shs. } 468,000$$

$$2P + 12^\circ + P + 24^\circ + 72^\circ = 180^\circ$$

$$2P + P + 12^\circ + 24^\circ + 72^\circ = 180^\circ$$

$$3P + 108^\circ = 180^\circ$$

$$3P + 108^\circ - 108^\circ = 180^\circ - 108^\circ$$

$$3P = 72^\circ$$

$$\frac{3P}{3} = 24^\circ$$

$$P = 24^\circ$$

2mks.

Solution:

$$1 \text{ kg} = \text{shs. } 5180 \text{ my}$$

$$f. 850 = 850 \times \text{shs. } 5180 \text{ 2mks.}$$

$$= \text{shs. } 4,403,000 \text{ my}$$

$$A = \pi r^2$$

$$= \frac{22}{7} \times 14 \text{ cm} \times 14 \text{ cm}$$

$$r = \frac{14}{2}$$

$$= 7 \text{ cm}$$

$$22 \times 14 \text{ cm} \times 14 \text{ cm my}$$

$$= 616 \text{ cm}^2$$

$$= 2(616) \text{ ft}$$

2mks.

$$T.A = 12,320 \text{ cm}^2 \text{ Ans}$$

Solution -

$$a(3b-c)$$

$$2(3A-3)$$

$$2(12-3) \text{ m}$$

$$2(15)$$

$$2 \times 15$$

$$= 30.$$

$$12+3$$

$$= 15.$$

2mks.

Thousands	Units
255	220.

Two hundred fifty five thousand  
two hundred twenty.  $\therefore$   
2mks.

### SECTION B.

(a) Angelina	Jovina	Total
$2x-3$	$2x$	$33\frac{1}{2}$ .
$2x-3+x$	$= 33\frac{1}{2}$ .	
$x+2x-3$	$= 33\frac{1}{2}$ .	
$2x-3+3$	$= 33\frac{1}{2} + 3$ .	
$2x$	$= 36\frac{1}{2}$ .	
$\frac{2x}{2}$	$= \frac{36\frac{1}{2}}{2} = 18\frac{1}{4}$	2marks.
$x$	$= 18\frac{1}{4}$ .	

Jovina is  $18\frac{1}{4}$  old.

$$2x+5 \geq 20.$$

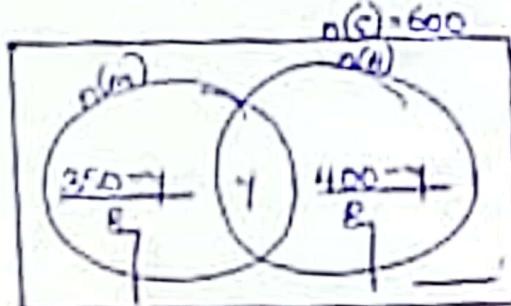
$$2x+5-5 \geq 20-5 \text{ m}$$

$$2x \geq 15$$

$$\frac{2x}{2} \geq \frac{15}{2} \text{ m}$$

$$x \geq 7\frac{1}{2} \text{ m}$$

5mks.



$$\begin{aligned}
 350-y + y + 400-y &= 600 \\
 350 + 400 - y &= 600 \text{ m} \\
 750 - y &= 600 \\
 750 - 750 - y &= 600 - 750 \\
 -y &= -150 \\
 \frac{-y}{-1} &= \frac{-150}{-1} \\
 y &= 150 \text{ pupils.}
 \end{aligned}$$

$$b) (350-y) + (400-y)$$

$$350-150 + 400-150.$$

$$(200 + 250),$$

$$450 \text{ pupils.}$$

5 marks

### 22(a) Trapezium

$$b) 4y-20^{\circ}+80^{\circ} = 180^{\circ} \text{ m}$$

$$4y + 60^{\circ} = 180^{\circ}.$$

$$4y + 60^{\circ} - 60^{\circ} = 180^{\circ} - 60^{\circ}.$$

$$4y = 120^{\circ} \text{ m}$$

$$\frac{4y}{4} = \frac{120^{\circ}}{4} \text{ m}$$

$$y = 30^{\circ} \text{ m}$$

### 24) Solution

change m to cm.

$$1m = 100cm.$$

$$42m = (42 \times 100)cm.$$

$$4200cm$$

$$3941 \text{ B}$$

$$140 \text{ tiles}$$

$$1m = 100cm.$$

$$10cm = (0.05 \times 100)cm.$$

$$1050cm.$$

$$350 \text{ tiles}$$

$$3941 \text{ cm}$$

$$350 \text{ tiles}$$



$$L \times W \times H = \pi r^2 h$$

$$44 \times 28 \times 50 = \frac{22}{7} \times r^2 \times 100$$

$$61600 = \frac{22}{7} \times 100 \times r^2$$

$$7 \times 61600 = \frac{22}{7} \times 100 \times r^2 \times 7$$

$$431200 = 2200 \times r^2$$

$$\frac{431200}{2200} = \frac{2200r^2}{2200}$$

$$196m = r^2$$

$$\sqrt{r^2} = \sqrt{196m}$$

$$r = 14m$$

$$\text{Diameter} = r + r \\ = (14 + 14)m \\ = 28m$$

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Lum	= Product of ratio $\times GCF$
600	$= 4 \times 5 \times 6 \times GCF$
600	$= 120 \times GCF$
600	$\frac{600}{120} = \frac{120 \times GCF}{120}$
5	$5 = GCF$ 3marks
GCF	$= 5$ M

b)  $4 \times 5 : 5 \times 5 : 6 \times 5$  M

 $20 : 25 : 30$  M
  $\text{Range} = HV - LY$ 
 $30 - 20 = 10$  M
  $\therefore 10 : M$

60

X	4	-19	5	-19	3
Y	-7	-2	10	-8	4

$$Y = 3X - 5 \quad Y = 3X - 5$$

$$Y = 3 \times 4 - 5 \quad -2 = 3X - 5$$

$$Y = 12 - 5 \quad -2 + 5 = 3X - 5 + 5$$

$$Y = 7 \quad 3 = 3X$$

$$Y = 3X - 5 \quad \frac{3}{3} = \frac{3X}{3}$$

$$Y = 3 \times 5 - 5 \quad 1 = X$$

$$Y = 15 - 5 \quad Y = 3X - 5$$

$$Y = 10 \quad -8 = 3X - 5$$

$$Y = 3X - 5 \quad -8 + 5 = 3X$$

$$Y = 3 \times 3 - 5 \quad -3 = 3X$$

$$Y = 9 - 5 \quad \frac{-3}{3} = \frac{3X}{3}$$

$$Y = 4 \quad -1 = X$$

5marks

(140 x 350) tiles

49000 tiles my

49000 x shs. 17100 5mks.  
shs. 837900000 A

25 Clothing 20%, Food 30%.

Remaining 100% - (20% + 30%)  
100% - 50% = 50%.

Fees =  $\frac{1}{2}$  of 50% mixed fraction  
 $\frac{1}{2} \times 50\% = 25\%$   
 $\frac{100}{2} \times \frac{1}{3} (30/1 + 20/1 + 20/1)$   
 $\frac{100}{2} \times \frac{1}{3} (75\%) = 25\%$ .

Let the saving be x.

$$\frac{25x}{100} = \text{shs. } 270,000.$$

$$\frac{100 \times 25x}{100} = \text{shs. } 270,000 \times 100.$$

$$\frac{25x}{25} = \text{shs. } 270,000000$$

$$x = \text{shs. } 1,080,000$$

$$\text{Food} = \frac{30}{100} \times \text{shs. } 1,080,000$$

$$\text{shs. } 324,000.$$

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Item	Amount	Unit cost	Total cost
Oil	4 liters	shs. 3650	shs. 14,600
Soap	2 bars	shs. 4500	shs. 9000
Coffee	2 tins	shs. 5000	shs. 10000
Beans	3 kg	shs. 1600	shs. 4800
Sugar	500 gms	shs. 1600	shs. 800
			Total cost shs. 40000

Shop  
A = qty x unit cost  
" x shs. 3650  
shs. 14,600 B

Coffee  
qty x unit cost.  
2 x shs. 4500  
shs. 9000. B

Beans Amount  
shs. 15000  
shs. 5000. B

Sugar Amount  
Unit cost.  
shs. 1600 B  
shs. 32000  
=  $\frac{1}{2}$   
= 500 gms. B

4.0000 F  
37500 F  
2500 E

$\left( \frac{2500}{40000} \times 100 \right) \%$

$\left( \frac{2500}{40000} \times 100 \right) \%$

12.5% A

$$31 \text{ shs} 980,000 \\ \text{shs} 700,000 B_7 \\ \text{shs} 28,000$$

$$I = P \times R \times t$$

$$280,000 = 700,000 \times R \times \frac{4}{100}$$

$$280,000 = 700,000 \times R \times \frac{4}{14}$$

$$280,000 = 28,000 \times R$$

$$\frac{280,000}{28,000} = \frac{28,000 R}{28,000}$$

$$10\% = R \quad 4 \text{ marks}$$

$$1 \cdot R = 10\% \cdot A_7$$

15A 4.02

10

$$= \frac{3015\phi}{11\phi}$$

= 3015 children A\_7

$$32 \quad 60 \times 20 = I \times 25$$

$$1200 = 25 I$$

$$\frac{1200}{25} = \frac{25 I}{25}$$

$$48 = I \quad \boxed{3 \text{ mks}}$$

$$(b) 100\% - 32\% \times 6000 \text{ children.}$$

$$67\% \times 6000 \text{ children.}$$

$$\frac{67}{100} \times 6000 \text{ children.}$$

$$(67 \times 60) \text{ children } B_7$$

$$4020 \text{ children.}$$

$$(100 - 26)\% \times 4020 \text{ children.}$$

$$75\% \times 4020 \text{ children}$$

$$\frac{75}{100} \times 4020\phi$$

$$\frac{75}{10} \times 402$$